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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,124	09/26/2005	Toru Inoue	1089.45436X00	4032
20457 7590 05/13/2011 ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873				
EXAMINER				
CHANG, VICTOR S				
ART UNIT		PAPER NUMBER		
1788				
MAIL DATE		DELIVERY MODE		
05/13/2011		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/551,124

Applicant(s)

INOUE ET AL.

Examiner

VICTOR S. CHANG

Art Unit

1788

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 6, 14-18, 20 and 28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6, 14-18, 20 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-940)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5/5/11
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Introduction

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' arguments and remarks filed on 5/5/2011 have been entered. Claim 1 has been amended. Claims 1, 6, 14-18, 20 and 28 are active.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Rejections not maintained are withdrawn.

Claim Rejections - 35 USC § 112

4. Claims 1, 6, 14-18, 20 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, lines 2-3, the limitation "varying from one region to another" is vague and indefinite, because it is unclear how to structurally differentiate "one region" from "another". For the present Office action, based on applicants' provided support in specification page 21 and Fig. 4 (see Remarks filed 12/11/2009, page 6), the intended scope of the claim language is interpreted as follows: As shown in Fig. 3, prior to applying the sound insulator to a vehicle

structural surface, the layers of sound insulator are substantially flat and have uniform thickness in a range of 1 to 50 mm. As shown in Fig. 4, after applying the sound insulator to a vehicle structural surface and forming a silencer, the layers of the sound insulator are sandwiched in-between and compressed by vehicle structural panels, which do not necessarily have parallel surfaces, the resultant thickness of the sound absorption layer is arbitrarily deformed to varying thicknesses from one area (region) to another by compression forces. In other words, the sound insulator of the claimed invention is a sound-insulating bodywork part.

Clarification is required in the next reply.

Rejections based on Prior Art

5. Claims 1, 6, 14-18, 20 and 28 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lucca et al. (US 4966799), and evidenced by Flowers et al. (US 4131664).

Lucca's invention relates to a vehicle noise reducing element (sound insulator). The element can be used either as a sound screen without a holding frame (**first embodiment**), and also to be used as a sound-absorbing and sound-insulating bodywork part (second embodiment), which has sufficient compressive strength and without a supporting surface, in a modern plastic bodywork for motor vehicles. This allows the weight of the overall bodywork construction to be reduced considerably (ultra-light weight). See col. 1, ll. 63 to col. 2, ll. 5. Fig. 2 illustrates the noise reducing element contains a padding layer 21, a thermoplastic sheet layer 23, and a thin heat-sealable adhesive layer 27 between the layers 21 and 23. The padding layer is sound absorbing (sound absorption layer) and consists of a thermoformed fiber mat bonded with a

thermoplastic. See col. 2, ll. 67-68. The thickness of the padding layer depends on the required sound absorption, i.e., the thickness is result effective for sound absorption. See col. 3, ll. 40-41. Useful fiber mat for the sound-absorbing layer 21 has a low density of 50-150 kg/m³ (0.05-0.15 g/cm³). See col. 3, ll. 49-55. The thermoplastic sheet layer (air impermeable layer) consists of polypropylene. See col. 2, ll. 59 through col. 3, ll. 6. The thickness of the sheet layer can be adapted to specific use requirements. When the noise reducing element is used as a sound insulator and needs to have little mechanical stability (without a supporting surface, i.e., **second embodiment**) but good sound absorption, the element should possess a relatively thin thermoplastic sheet layer (air impermeable layer) and a comparatively thick padding layer (sound absorption layer). See col. 3, ll. 5-6. Figs. 1-3 show that all the layers are coextensive (the thin heat-sealable adhesive film layer 27 provides 100% adhesion area). Fig. 4 illustrates in a first embodiment application, the sound-absorbing lining 41 is installed between the engine space and the vehicle interior. The sound absorbing padding layer faces the engine space (source of noise). See col. 3, ll. 20-23.

For claims 1, 14, 15, 17, 18 and 28, Lucca is silent about the following structural features of the **second embodiment**: 1) the thickness range of the sound absorption layer, 2) compressed by outer structural panels, the thickness of the sandwiched sound absorption layer arbitrarily varies from one region to another (see interpretation above) and the range of variation, 3) the thickness and area-weight of the thermoplastic sheet layer (air-impermeable layer), 4) the adhesion peel strength between the sound-absorbing layer and the thermoplastic sheet layer, and 5) the sound absorption layer faces a vehicle body panel, and the air-impermeable layer faces vehicle interior. However, regarding 1), since Lucca teaches that the thickness of the padding

layer is result effective for sound absorption, a workable range of thickness for vehicle body work is deemed to be either anticipated, or obviously provided by practicing the invention of prior art. Regarding 2), since Lucca teaches the noise reducing part (sound insulator) in the vehicle sound-insulating bodywork has sufficient compressive strength and without a supporting surface, one of ordinary skill in the art of bodywork would have instantly envisaged that the noise reducing part is compressed and sandwiched between bodywork panels. Further, since it is known that bodywork panels have non-parallel uneven contours, which would necessarily results in the relatively soft padding layer of the noise reducing part being arbitrarily compressed and varied to different thickness from one area to another, as an evidenced by Flowers. Flowers illustrates in Figs. 4-6 an acoustical vehicle panel comprising a composite fibrous pad (noise reducing element, or sound insulator) 50 comprising an impervious film 56 and fibrous layer (sound absorption layer) 54. The composite fibrous pad fills the gap and is sandwiched between the panels. A bar 110 compacting the fibrous layer 54 and varies its thickness locally. See col. 4, ll. 60 through col. 5, ll. 8; and col. 9, ll. 45-55. Finally, regarding the thickness variation range of the compressed sound insulator, since the sound insulator fills the gap between the panels, its thickness variation is inherently less than the maximum initial thickness of uncompressed sound insulator. Regarding 3), since Lucca renders the general structure and composition of the sound insulator of the claimed invention either anticipated or obvious, and they are for the same end use, a workable thickness of the thermoplastic (air-impermeable) layer is also deemed to be either anticipated, or obviously provided by practicing the invention of prior art for the same end use as the claimed invention, dictated by the required properties for the same end uses. As to the area-weight of the thermoplastic layer, it is merely an inherent property inversely related to the

thickness value of the thermoplastic layer. Regarding 4), similarly, since Lucca renders the general structure and composition of the noise reducing element of the claimed invention either anticipated or obvious, and they are for the same end use, a workable adhesion peel strength between the sound absorbing layer and the sheet layer is also deemed to be either anticipated, or obviously provided by practicing the prior art. Regarding 5), since Lucca teaches in the first embodiment the sound-absorbing lining 41 is installed between the engine space and the vehicle interior, and the sound absorbing padding layer faces the engine space (source of noise), orienting the padding layer in the second embodiment toward the outer vehicle body panel (source of noise) is also deemed to be either anticipated, or obviously provided by practicing the invention of prior art. If a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740, 82 USPQ2d 1385, 1396 (2007). Finally, regarding the “resonance” property of the air impermeable layer, absent any distinct structural and/or compositional features, it is deemed to be inherent to the same structure and composition of the air-impermeable layer, which has been rendered either anticipated, or obviously provided by practicing the prior art, as set forth above.

For claims 6, 16 and 20, since Lucca’s noise reducing element has sufficient compressive strength (compression repulsive force) as set forth above, a workable initial compression repulsive force is also deemed to be either anticipated, or an obvious routine optimization to one of ordinary skill in the art, motivated by the desire to obtain the required strength for the same end use as the claimed invention.

Response to Arguments

6. Applicants argue at Remarks page 8:

The ultra-light sound insulator of the present invention does not need to be dimensionally stable, does not need to itself form a structural element, and can have its thickness varied to adopt to the vehicle body panel to which it is applied. In contrast, because of the dimensionally stable supporting layer in Lucca et al., the structural element of Lucca et al. is intended to form a structural element that can be used without a holding frame or as a bodywork part without a supporting surface, for example in a plastic bodywork for motor vehicles, etc.

However, applicants' repeated arguments again ignore that the relied upon second embodiment of Lucca is used as a sound insulator and needs to have little mechanical stability, i.e., does not need to itself form a structural element. Similarly, applicants' continuing repeated arguments throughout the remaining pages of the Remarks directed to Lucca's first embodiment of a structural element are misplaced and unpersuasive.

Applicants argue at pages 8-9:

One difference in structure between the ultra-light sound insulator of the present invention and the noise-reducing structural element of Lucca et al. is that the sound absorption layer in the ultra-light sound insulator of the present invention has a thickness in a range of 1 to 50 mm, the thickness varying from one region to another in a range not greater than 50 mm.

However, since Lucca teaches that the thickness of the padding layer is result effective for sound absorption, a workable range of thickness for vehicle body work is deemed to be either anticipated, or obviously provided by practicing the invention of prior art. As to the thickness variation, it is merely caused by compression of the padding layer between the unparallel non-even panels, as illustrated in Fig.4 of applicants' specification. It is inconceivable how such an arbitrary passive thickness variation is a contributing advantageous feature for noise reduction.

Finally, it is inconceivable that thickness variation would be anything but be less than the maximum initial thickness of uncompressed sound insulator, i.e., the range of the thickness variation is inherent.

Applicants argue at page 9:

Lucca teaches that an element which is to be used as a sound screen and needs to have little mechanical stability but good sound absorption should possess a relatively thin supporting layer and a comparatively thick padding layer. In short, the sound screen of Lucca et al. should have a comparatively thick padding layer. That is, in the sound screen of Lucca et al., a high sound absorption rate cannot be assured when the thickness of the sound absorption layer is varied or reduced.

However, applicants apparently have confused the initial thickness of the noise reducing element with the variation in thickness after the element is assembled in a vehicle bodywork panel.

Further, contrary to the evidence by Flowers, as set forth above, that desired noise reducing property is provided after assembling the noise reducing element in a bodywork panel, with the presence of local thickness variation caused by fitting the noise reducing element to the contours of the panels, applicants' argument is baseless and unpersuasive.

For the same reasons set forth is prior Office action dated 2/8/2011, the remaining repeated arguments throughout pages 10-19 have again been considered, but unpersuasive.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VICTOR S. CHANG whose telephone number is (571)272-1474. The examiner can normally be reached on 6:00 am - 4:00 pm, Tuesday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alicia Chevalier can be reached on 571-272-1490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/
Primary Examiner, Art Unit 1788